

# Applus<sup>+</sup>

## Division Energy & Industry

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Services for the Mining sector

► 2025

ENERGY & INDUSTRY DIVISION





# Mining Services

Applus+ has been involved in mining projects on 4 continents for more than two decades.

+16,400 professionals with technical disciplines applicable to the mining sector.

We provide services **throughout the life of the Project**, incorporating the latest **technology** and complying with the demanding **regulations and specific standards** of the sector.

- + Environment
- + Electrical Area
- + Mechanical Area
- + Construction
- + Renewable Energies



Applus+ offers **environmental management** and **sustainability** services and solutions on five continents by integrating digital tools such as its AmbiensQ platform, sensorisation and an expert consultancy team

**Main Services**

Pre-construction, financing	Construction	Operation	Closing
Environmental Studies	Environmental Monitoring	Intelligent Environmental Monitoring	Intelligent Environmental Monitoring
Specific studies and baseline environmental monitoring (Due Diligence) air quality, water, soil, modeling, inventories and forest censuses)	Pollutant dispersion modeling	Environmental Compliance Management	Environmental Compliance Management
Management of environmental permits and authorizations	Administration of compliance with environmental obligations.	Environmental monitoring	Ecosystem restoration
Social management	Archaeology: (Monitoring and rescue of heritage, public archaeology, auditing, laboratory, Closure of Archaeology Programs)	Climate Change /Sustainability /Decarbonization	
Supply, installation and operation of equipment for monitoring primary resources	Implementation of biotic management plans	Comprehensive solid waste management	
Archaeology: Diagnosis and prospection, management plan	Environmental monitoring and monitoring		
	Biotic and landscape offsets		



Applus+ provides **testing, inspection and certification (TIC)** services in the electrical area of mining projects during the power **generation, transmission and distribution process**.

### Main Services

Prospecting, Evaluation	Construction	Operation	Closing
Consulting Electrical Project Technique		Maintenance Predictive/Preventive	Final and progressive project closure plan
Basic and conceptual engineering of electrical projects (Includes lines, networks and substations)		Energy efficiency	Verification and dismantling of facilities and equipment
Engineering of high voltage lines (up to 230kV)	Technical supervision and direction of construction and assembly of lines and substations	Inspections Regulatory	Inventory and/or survey of electrical assets
Substation Engineering and of medium and low voltage networks		Electrical Equipment Inspection	
Power flow simulations	Pre-commissioning and Commissioning	Aerial inspections and digitalization	
Simulations, modeling, and adjustments of electrical systems		Inventory and/or survey of electrical assets	
Analysis of power systems	Electrical Trials and Tests		
Procedures and management of property expropriations	Vendor inspection		
Electrical Design and Supervision	Project Quality Assurance and Control		
	Project management, specialized consulting		
Occupational Risk Prevention – Industrial Safety			
Professional and technical staff services, in-house professionals			



We offer **inspection, non-destructive testing (NDT), certification and technical assistance** solutions to ensure the **quality, safety and reliability** of projects and facilities in the mining sector.

### Main Services

Prospecting, Evaluation	Construction	Operation	Closing
Studies and designs: HAZOP, LOPA, Consequence Analysis, QRA, HAZID, RCM, FMEA, RBI, among others		Maintenance Predictive and preventive	Final and progressive closure plan
Basic, conceptual and detailed engineering		Consulting and integrity studies	Integrity and reliability line creation
Simulations, modelling and adjustments of mechanical systems	Pre, commissioning and Commissioning	Inspection of facilities, equipment and systems	Verification and dismantling of facilities and equipment
Process Risk Analysis and Quality Assurance	Engineering and maintenance management	Equipment inspection, with drones, satellites	
Energy efficiency in industrial systems and plants	Process Safety	Internal and external corrosion Studies, Monitoring and Evaluation	
	Inspection at source / vendor inspection	Supervision of projects, integrity, valuations and repairs	
	Implementation and assurance of process technology	Conventional and advanced non-destructive testing	
	Energy efficiency		
	Supervision of mechanical works projects		
	Project Quality Assurance and Control		
Occupational risk prevention – industrial safety			
Professional and technical staff services, in-house professionals			



Applus+ offers **consultancy, inspection, testing and quality assurance** services for infrastructure projects at all stages and in the different areas of civil and structural engineering.

### Main Services

Prospecting, Evaluation		Construction	Operation	Closing
Basic studies: geology, geotechnics, geophysics, hydraulics, hydrology and flooding		Supervision and supervision of infrastructure, plant and equipment		Studies of decommissioning and abandonment
Engineering: civil, structural of roads and pavements, drinking water and sanitation.		QA/QC inspection, HSEQ integrated management systems		Final Shaping Design slopes and stability
Testing and laboratories		Operational monitoring, verification, control and auditing		Morphology restoration plan and water management plan
Territorial management, expropriations and real estate	Comprehensive road asset management		Management of works for taxes	Programs and plans for conversion and progressive closure
Inspection at source / vendor inspection	Project management, specialized consulting			Mining Inspection and Legal Technical Assistance
Planning, design, geo-metallurgy, PTO and FBM	Automated and digitalized geotechnical, seismic, and structural instrumentation.			Geotechnics and soil mechanics, compaction, decommissionin
Geo information GIS, LiDAR, InSAR, Satellite			Rock Testing, Soils and laboratory	
Monitoring, control and topographic, planimetric and altimetry surveys				Slope Stability Monitoring Program
Risk Management and Infrastructure Integrity				
Professional and technical staff services, in-house professionals				



Applus+ provides complete **services and solutions** for the development of electricity generation projects **with both conventional and non-conventional sources.**

### Main Services

Scouting & Feasibility	Pre-construction, financing	Construction Supervision	Commissioning	Operation	Closing
Support for the bidding process	Technical Due Diligence	Owner's Engineering	Supervision and management of project start-up	Technical Due Diligence (M&A)	Final and progressive project closure plan Verification and dismantling of facilities and equipment
Feasibility analysis of Renewable projects	Preliminary Technical Studies: EIA, connection studies, topography, etc.	Factory Supervision and Component Quality Testing		Independent Audits	Inventory and/or asset survey
Red-Flag Analysis	Review of Equipment Contracts, EPC/O&M	Final Factory Testing (FAT) Support		Detailed Inspections: Civil, Mechanical, Electrical, Environment and Health & Safety	
Basic Engineering	Technical Specification Review			Electrical Testing / Predictive Maintenance	
Resource and Energy Production Studies					
Financial Model Review	Detailed engineering	Construction Management			
CAPEX and OPEX estimation		Inspection, testing and testing			
Environmental inspection and control					
Outsourcing of technical personnel					
Occupational Risk Prevention – Industrial Safety					



# Mining Solutions

Innovation and technology converge to transform challenges into opportunities for growth and success. We adapt to rapidly evolving needs: increased productivity and efficiency, new mobility, energy transition, electrification, and connectivity. Our portfolio of cutting-edge technology solutions is designed to drive our clients' businesses forward and create a sustainable, connected, and efficient future.

- + **Remote Data Capture and Analysis**
- + **Process automation and data management**
- + **Mobility Solutions**
- + **3D Technologies**
- + **Tailor-made solutions**
- + **E-delivery**

The success of our mining consulting, engineering and inspection services is due in large part to the incorporation of the latest technologies and equipment. We adapt and combine our platforms and solutions to obtain the best results.

**ambiensQ**

Sustainability and smart environmental monitoring solution for efficient project management.

**SIGT**

GIS that shows the field monitoring of any infrastructure using digitized mapping and instrumentation.

**Digital Twin**

Virtual reality model capable of tracking the degradation of physical assets, using photogrammetry.

**NaturA+**

Accurate Vegetation Data in High-Stress Zones Generated by Lidar

**Satellite**

InSar technology for monitoring deformations in infrastructure. Image Acquisition and Processing.

**TRACE**

Geographic information system, designed for the maintenance management of distribution networks.

**Drones**

Surveys with LiDAR sensors, thermal optics, inspections and monitoring.

**Hawk**

High-definition analysis of infrastructure using visual, thermographic capture and georeferencing from a helicopter

**HCLab**

Comprehensive laboratory management, web platform for the client, with digital signature implemented for reports.

**ODS**

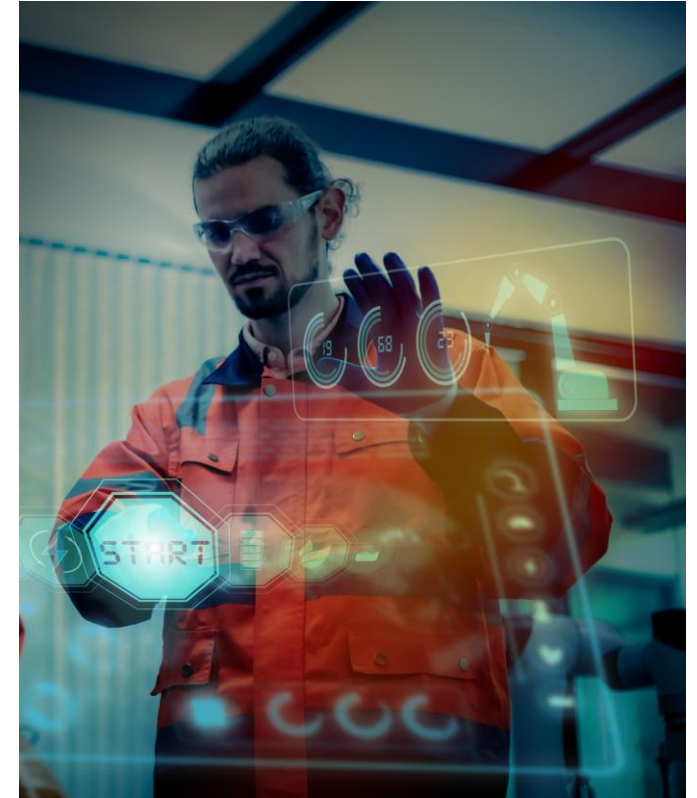
Quantifies the organization's sustainability performance and identifies actions for continuous improvement.

**FIELDEAS**

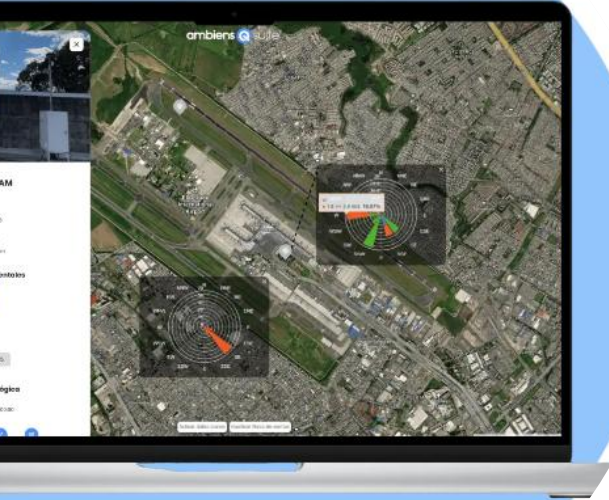
Facilitate the collection of data and records of the processes to any mobile device, obtaining quality reports and better access.

**Common bottlenose dolphin**

Management of reports, service orders, milestones and activities carried out by the staff of a given project.



# Annex I

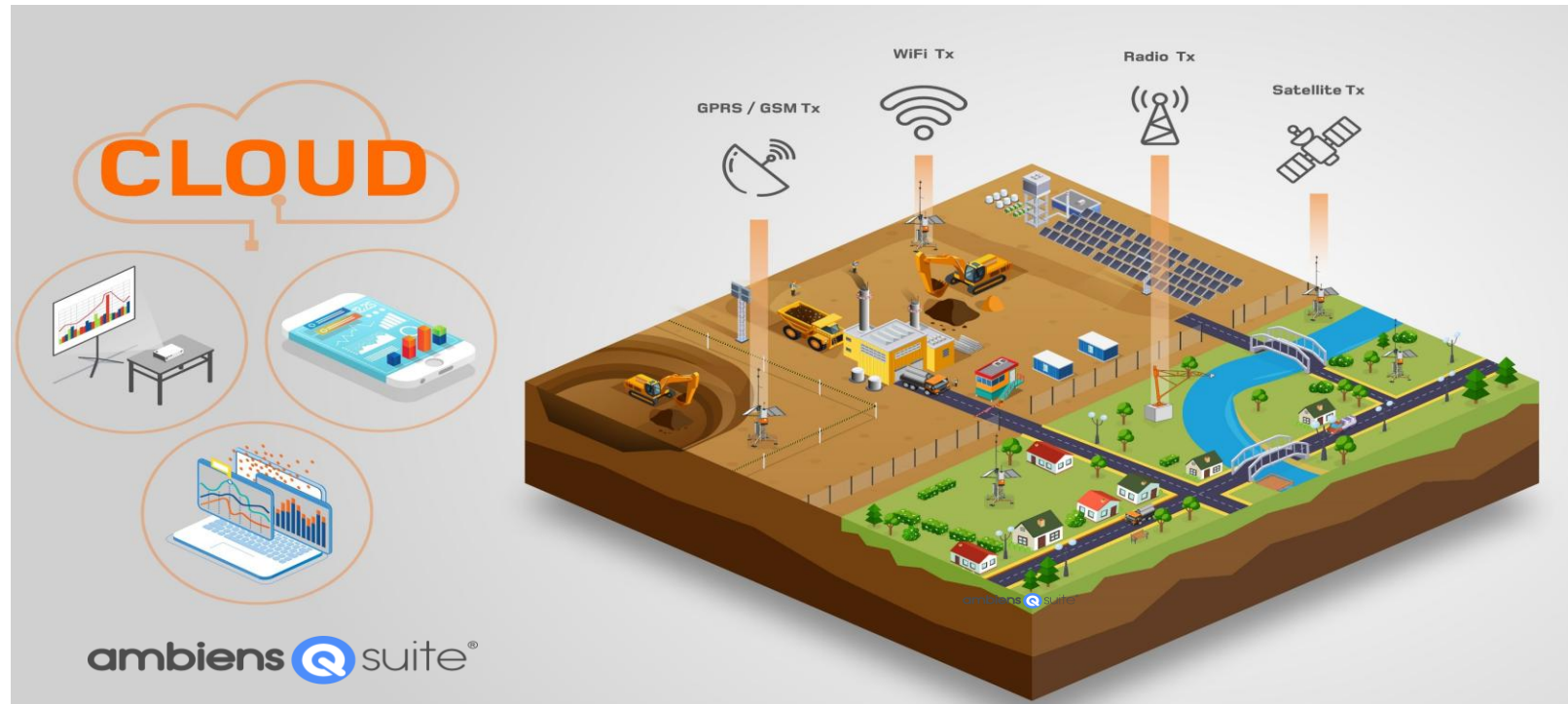


The intelligent environmental monitoring and sustainability solution for the efficient management of your projects.

[www.ambiensq.com](http://www.ambiensq.com)

+ ambiens  suite<sup>®</sup>

## Environmental Monitoring Systems



Air Quality



Speed and direction Wind  
gases



Noise



Meteorology



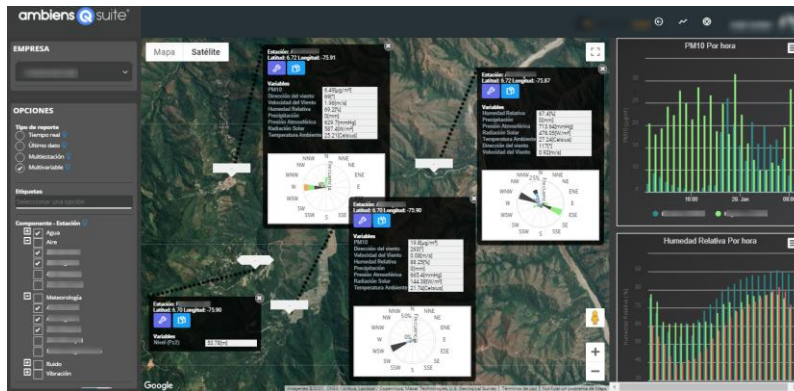
Solar radiation (DNI, DHI,  
GHI AND POA)



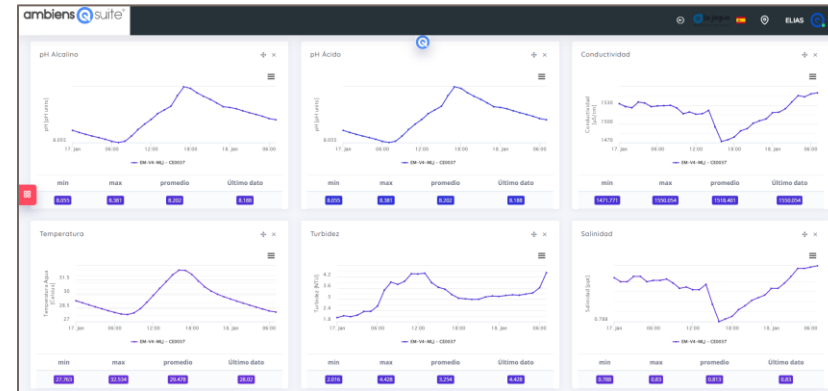
Water quality and  
quantity

# Environmental Data

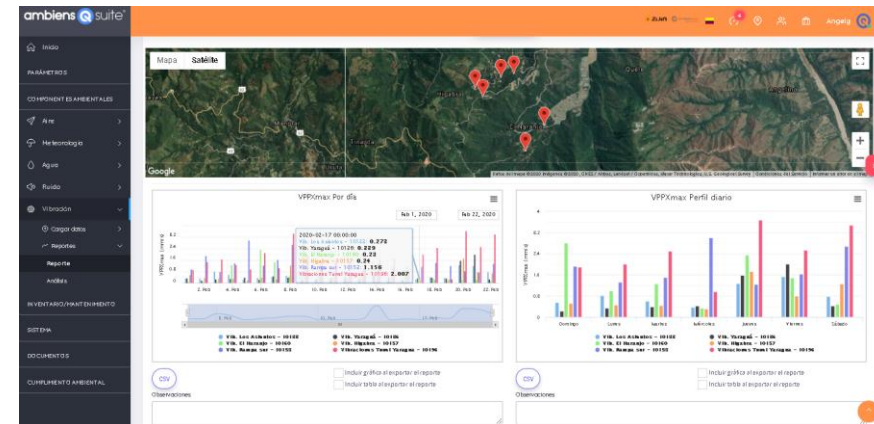
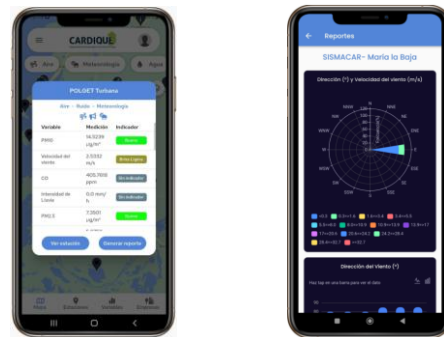
Interactive map for a global visualization of the stations and spatial analysis.



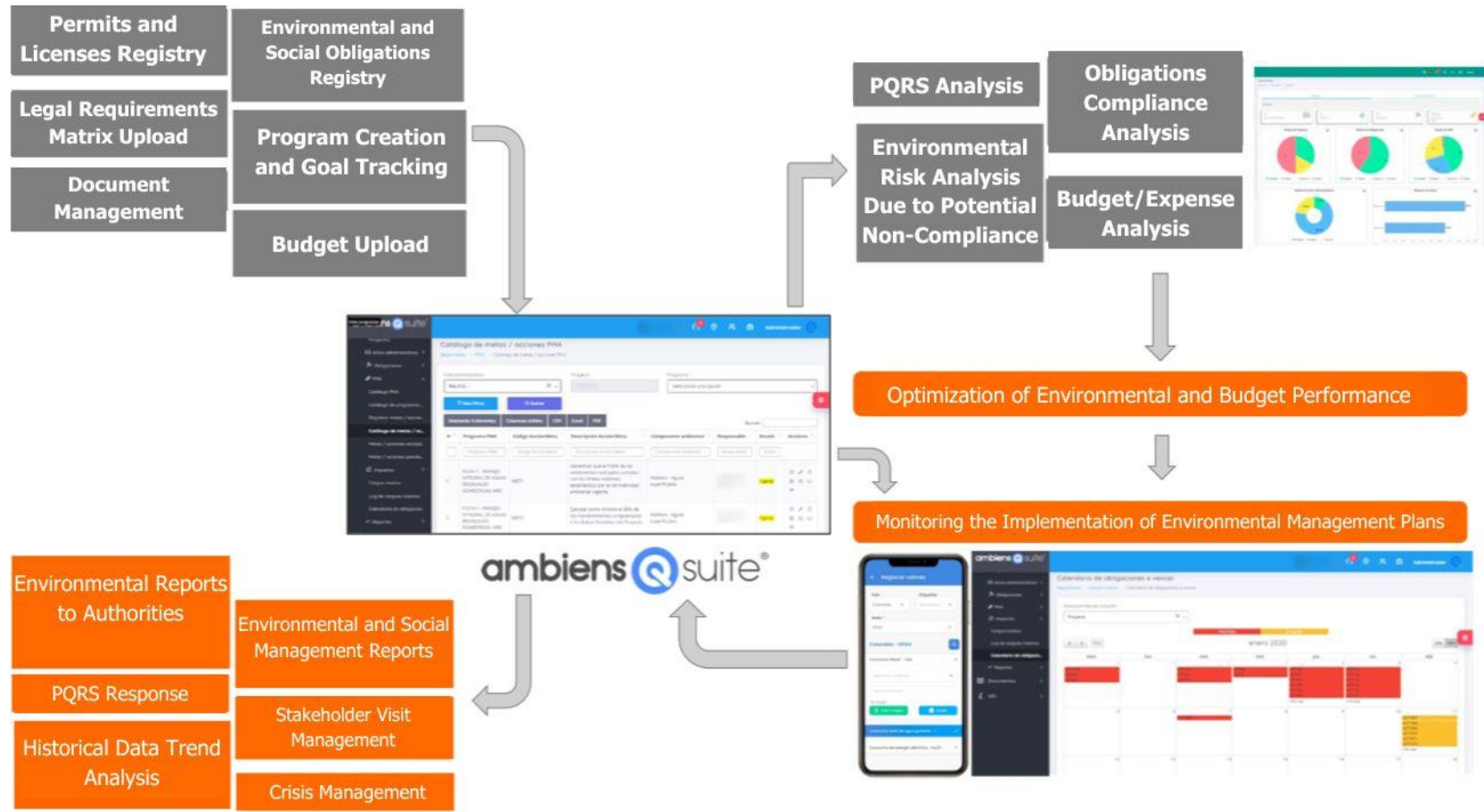
Configurable dashboard for real-time visualization of parameters of interest



Histories, correlations, alerts



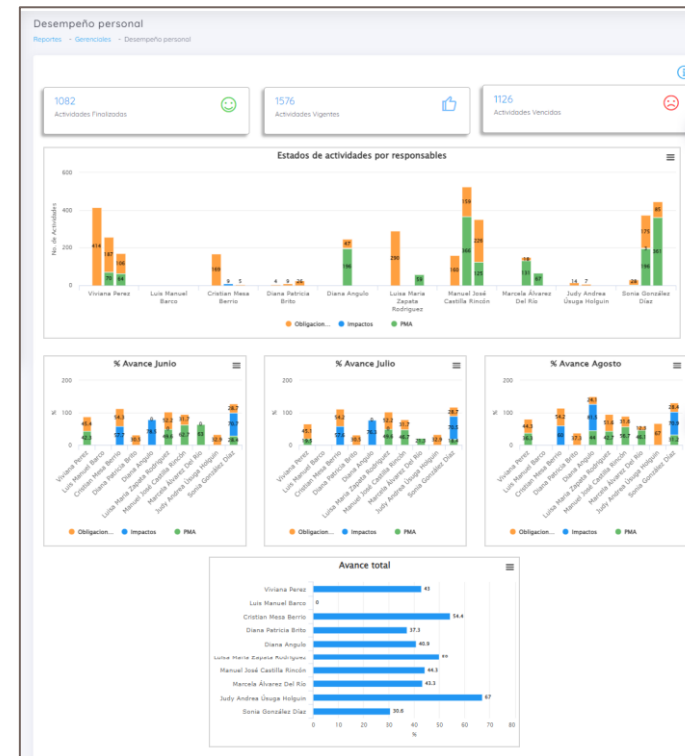
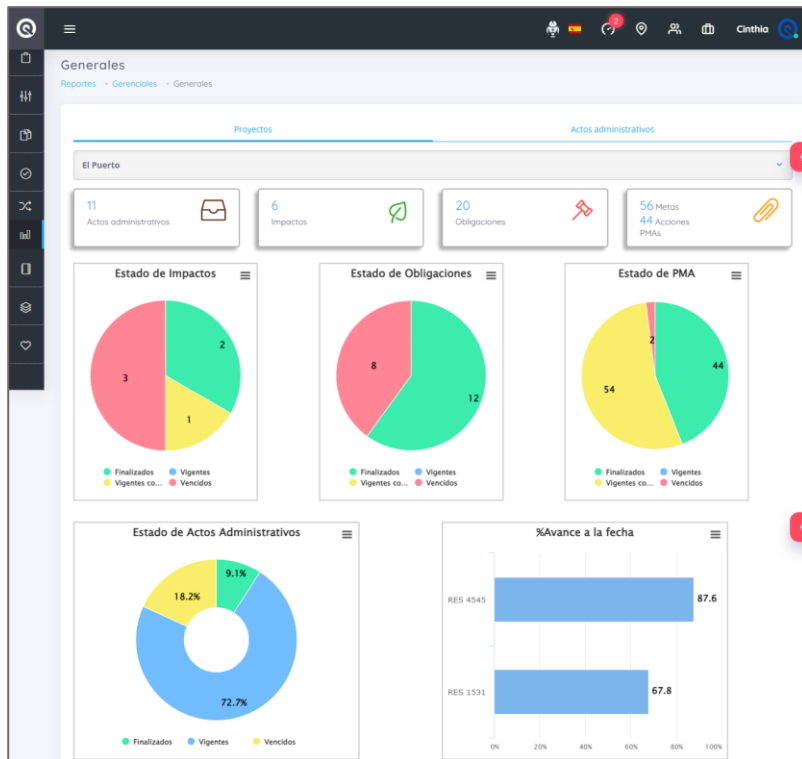
# Compliance with Environmental Obligations



We ensure the centralization, monitoring, and control of the requirements of your environmental license, permits, authorizations, compliance reports, and social management.

# Compliance with Environmental Obligations

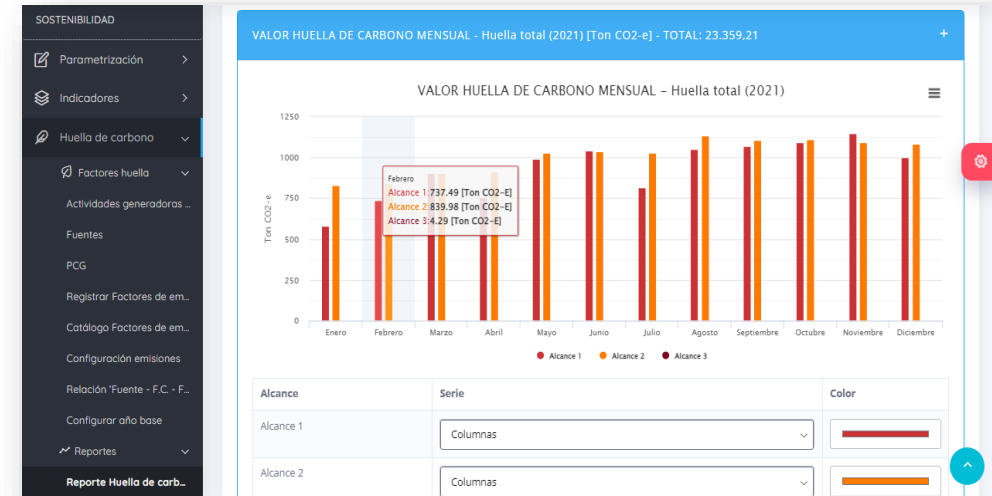
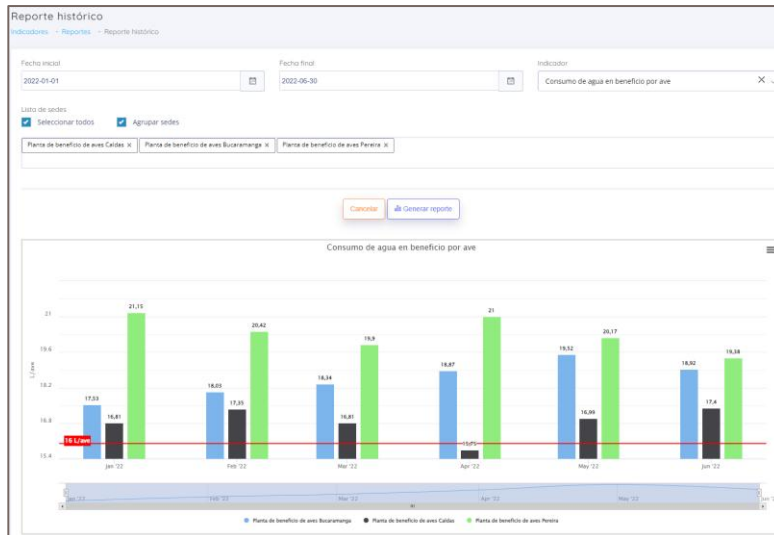
Dashboard of each project that allows you to see the general status of compliance and progress of the Obligations, Follow-up to the PMAs, Permits and authorizations.



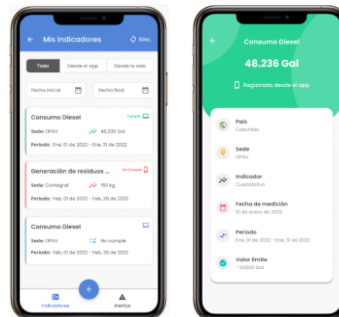
Performance monitoring report of responsible personnel

## Sustainability Indicators, HC, HH, Reports

Monitoring report to the indicators and comparative (headquarters and periods), indicator resume, Dashboard generation, Automatic calculation of carbon footprint, water footprint, sustainability reports.



ambiens  suite<sup>®</sup>



Thanks!

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